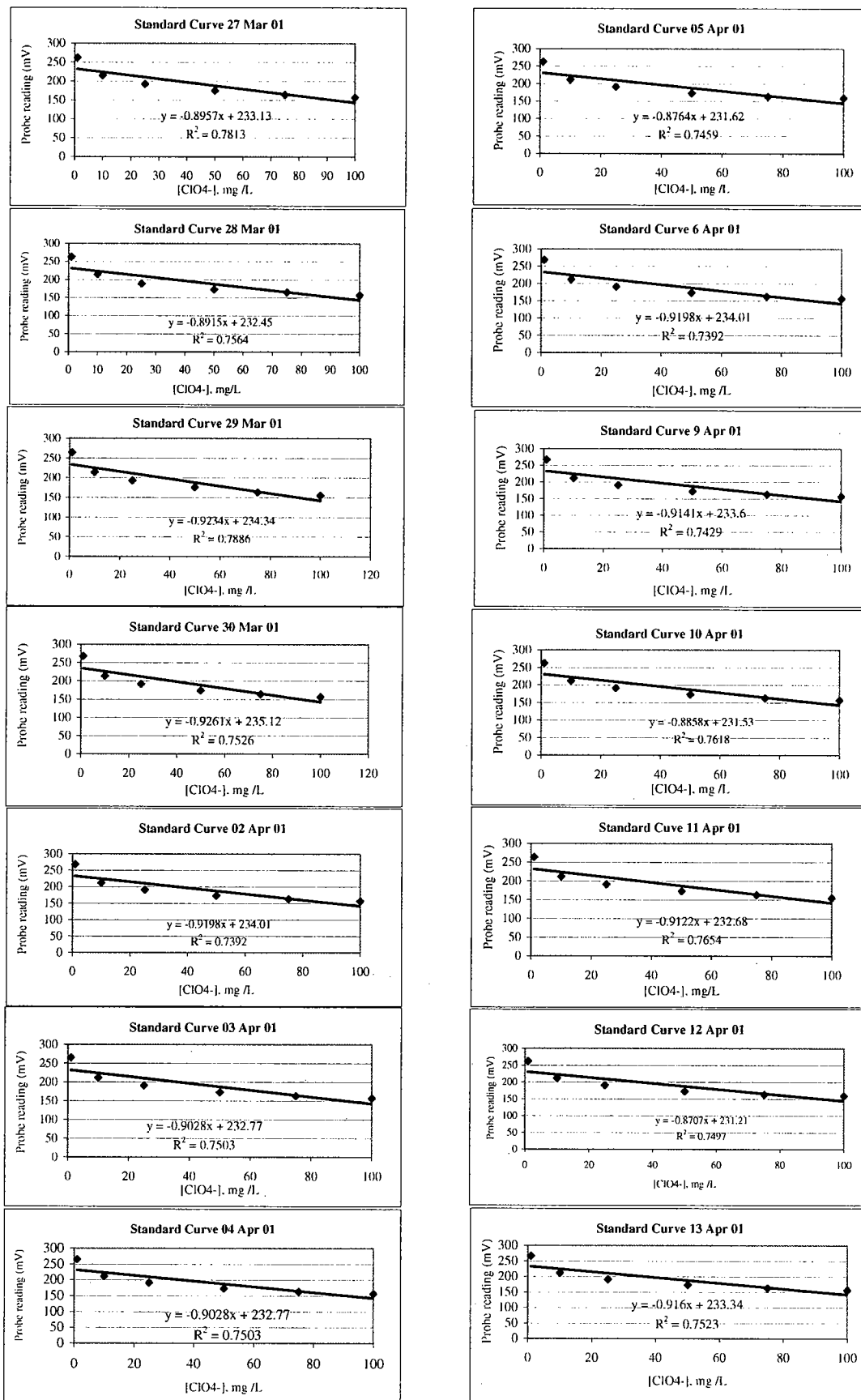


APPENDIX B

PHASE I PARAMETERS AND ClO_4^-
PROBE CALIBRATION CURVES

PHASE I START-UP
CIO₄⁻ STANDARD CALIBRATION CURVES

Page 1 of 1



**PHASE I OPERATING DATA
JET PROPULSION LABORATORY**

Page 1 of 3

Date	Time	Parameter	R1	R2	R3	Notes (pH/Temp/Flow Adjustments)
3/26/2001	12:25pm	Temp (°C)	17.5	17.7	17.6	Turned on thermostat @ 11am
	3:40pm	Temp (°C)	28.2	28.2	28.2	Turned down thermostat setting
3/27/2001	7:30am	Temp (°C)	35.4	35.1	34.2	Turned down thermostat setting
	8:50am	pH	7.61	7.5	7.55	
	9:20-45am					Added ice to inocula tanks
	11:30am	Pressure Drop (psi)	14	26	26	
	12:25pm	Temp (°C)	30.1	29.9	30.1	
		pH	7.53-7.65	7.46	7.67	
		conductivity (dS/m)	2.32	1.57	2.32	
3/28/2001	3:00pm	Temp (°C)	32.7-33.6			
		Pressure Drop (psi)	28 psi			
	7:45am	Temp (°C)	23.1	23	24.5	
		Pressure Drop (psi)	28	29	28	
	-	Temp (°C)	21.8	21.6	22.8	
		pH	7.39	7.04	7.3	
		conductivity (dS/m)	2.05	1.46	2.3	
3/29/2001	1:45pm	Temp (°C)	26.2	27.5	28.7	
		Pressure Drop (psi)	10	20	25	
	8:00am	Temp (°C)	25.5	25.8	27.2	
		Pressure Drop (psi)	18	24	27	
	8:35-40am	Temp (°C)	23.4	23.4	24.2	
		pH	7.55	7.14	7.57	
		conductivity (dS/m)	1.93	1.54	2.17	
3/30/2001	2:15pm					added 23.25g NaClO ₄ to R1
	2:25pm					added 23.25g NaClO ₄ to R3
	2:45pm	Temp	31.1	31.1	32.2	system temperatures (gauge)
	4:45pm	Temp (°C)	32.2	32.2	33.3	
		Pressure Drop (psi)	18	15	26	
	7:50	Pressure Drop (psi)	18	15	26	
		Temp (°C)	26.6	26.6	27.2	
4/2/2001	8:10	Temp (°C)	23.2	23.7	24	
		pH	7.47	7.05	7.39	
		conductivity (dS/m)	2.07	1.55	2.31	
	12:50pm	Temp °F	31.1	31.1	32.2	
		Pressure Drop (psi)	28	16	28	increased pressure drop through R2 by closing valve; now 20
	7:30am	Temp (°C)	18.2	19.0	19.2	
		pH	8.3	6.92	8.4	
4/3/2001		conductivity (dS/m)	1.91	1.52	2.19	
	3:30pm	Temp (°C)	21.1	22.2	21.9	
	8:45am	Temp (°C)	18.8	20	20	
	8:50am	Temp (°C)	17	17.5	17.3	
		pH	8.41	4.96	8.38	
		conductivity (dS/m)	1.87	1.55	2.21	
	10:15am					Heater turned on set at 26.6°C
4/3/2001	11:15am	Temp (°C)		20.4		
	11:45am	Temp (°C)	20.7	20.7	20.9	
	5:15pm	Temp (°C)		24		

Field Pilot Testing of a Dynamic Suspended Bed Reactor
for Removal of Perchlorate in Groundwater at JPL
Naval Facilities Engineering Service Center
June 30, 2003

**PHASE I OPERATING DATA
JET PROPULSION LABORATORY**

Page 2 of 3

		pH		6.3		
4/4/2001	8:15am					Heater turned on set at 26.6°C
	8:37am	Temp (°C)	16.9	17.1	17	
		pH	8.14	5.78	8.18	
		conductivity (dS/m)	1.95	1.69	2.23	
	4:40pm					turn off heater
4/5/2001	8:15am	Temp (°C)	18.9	18.9	18.9	Heater turned on set at 26.6°C
	8:32-36am	Temp (°C)	17.2	17.7	17.2	
		pH	7.58	5.52	7.7	
		conductivity (dS/m)	2.14	1.84	2.46	
	11:45am	Temp (°C)		23.1		
		pH		5.7		
	2:40pm	Temp (°C)		26.1		
		pH		6.67		cut heat for all three reactors
4/6/2001	8:42-50am	Temp (°C)	14.9	15	16.3	
		pH	8.19	6.28	8.27	added HCl to R1, R3 to bring pH down and NaOH to R2
		conductivity (dS/m)	2.22	1.87	2.54	
	10:20am	pH	7.88	6.81	8.07	
	11:30am	pH	7.69	7.18	7.85	
	12:50am	pH	7.63	7.37	7.93	
4/9/2001	11:15am	Temp (°C)	15.1	15.2	16.1	
		pH	8.78	6.82	8.64	need to adjust pH in all three reactors
		conductivity (dS/m)	2.3	1.98	2.51	
	1:30pm	pH	8.4		8.4	
	3:50pm	pH	8.29		8.32	
	4:00pm					added 4mL 6M HCl to R1, R3 to bring pH down
4/10/2001	8:15am	Temp (°C)	11.3		12.6	
		pH	8.18		8.23	
		conductivity (dS/m)	1.75		2.58	
	11:50am	Temp (°C)	17.3		18.3	
		pH	7.83		8.02-.05	
	1:45am	Temp (°C)	20.3		21.6	
		pH	7.78		7.96-.97	
	3:40pm	Temp (°C)	23.5		24	
		pH	7.7		7.92	
	3:50pm					added HCl to R1 (20 mL), R3 (30mL)
4/11/2001	3:55pm					turn off heat trace
	8:37-40am	Temp (°C)	17.1		18.3	
		pH	8.34		8.47	
		conductivity (dS/m)	2.11		3.03	
	10:50am	Temp (°C)	17.9		18.3	
		pH	8.09		8.3	
	3:15pm	Temp (°C)	17.5		18.6	
4/12/2001		pH	7.98		8.13	
		conductivity (dS/m)	1.65		2.23	
	10:10am					turn on heat trace for R1, R3 - set at 26.6°C
	10:18-20am	Temp (°C)	16.8		17.9	
		pH	8.38		8.46	
		conductivity (dS/m)	1.78		2.42	
	1:00pm	Temp (°C)	22.7		23.5	
		pH	8.10-12		8.19	
	3:15pm	Temp (°C)	25		27.6	
		pH	8.05		7.96	
	8:35am	Temp (°C)	20		21.1	
	9:03-07am	Temp (°C)	17.6		18.9	

**PHASE I OPERATING DATA
JET PROPULSION LABORATORY**

Page 3 of 3

4/13/2001		pH	7.92		8.07	
		conductivity (dS/m)	1.96		2.57	
	9:10am					added 30mL 6M HCl to R1, R3 to bring pH down
	11:04-07am	Temp (°C)	21.8		22.7	
4/18/2001		pH	7.49-.53		7.65	
	10:35am					turn on aerator in EQ tank #1 and heater in T1
	3:00pm					temp in T1 is 25°C
	3:40pm					GW flowing into T1 temp is 20.4°C
4/19/2001	3:55pm					turn off heat for T1
	8:35am					temp in T1 is 22.4°C; turn on heater for T1- set at 26.6°C
	10:30am					collected GW sample - temp. is 20.3°C; T1 temp. is 23°C
	2:50pm					Determined that heat could be left on overnight
4/20/2001	3:30pm					temp. in T1 is 22.3°C
	8:55am					temp in T1 is 27.1°C
	9:30am					temp in T1 is 27.7°C; consider turning off heat
	1:10pm	Temp (°C)	25.1			temp in T1 is 25.4°C
	1:45pm					temp in T1 is 25.9°C shut off heat
4/23/2001	2:00pm	Pressure Drop (psi)	18		20	Opened throttle valves on inlets to R1/R3
	8:30am					temp in T1 20.0°C
	4:00pm					temp in T1 20.7°C
4/25/2001	9:45am					temp in T1 is 21.3°C
	11:30am					turned on aerator in EQ tank
4/26/2001	9:15am					re-start system with R3 operating only
	11:20am	Pressure Drop (psi)			12	

Notes:

R1 - perclace

R2 - compost/food waste

R3 - JPL isolates

psi - pounds per square inch

dS/m - decisiemens per meter

T1 is influent Equalization Tank (see Figure 1)

mL - milliliter

M - molar

HCl - hydrochloric acid

NaClO₄ - sodium perchlorate

APPENDIX C

**PHASE I ANALYTICAL REPORTS AND
CHAIN-OF-CUSTODY RECORDS
FOR GROUNDWATER SAMPLES**



MONTGOMERY WATSON LABORATORIES

a Division of Montgomery Watson Americas, Inc.

555 East Walnut Street

Pasadena, California 91101

Tel: 626 568 6400 Fax: 626 568 6324

1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Foster Wheeler Environ. Inc.
1940 E Deere St, Ste 200

Santa Ana , CA 92705

Attention: Mark Lossi
Fax: 949 756-7560

DEB Debbie Frank
Project Manager

Report#: 78636
TREAT

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are QC Report, QC Summary, Data Report, Hits Report, totaling 5 page[s].

**MONTGOMERY WATSON LABORATORIES**

a Division of Montgomery Watson Americas, Inc.
555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400 Fax: 626 568 6324
1 800 566 LABS (1 800 566 5227)

Laboratory
Hits Report
#78636

Foster Wheeler Environ. Inc.
Mark Lossi
1940 E Deere St, Ste 200
Santa Ana, CA 92705

Samples Received
26-apr-2001 16:48:36

Analyzed	Sample#	Sample ID	Result	UNITS	MDL
	2104260260	PBR-4-I-1			
04/26/01		Nitrate as NO3 by IC	18	mg/l	.440
04/26/01		Nitrate-N by IC	4	mg/l	.100
04/26/01		Perchlorate	410	ug/l	40.000
	2104260261	PBR-4-I-7			
04/26/01		Acetate	36	mg/l	1.000
04/27/01		Total Organic Carbon	11.2	mg/l	.500
	2104260262	PBR-4-E-10			
04/26/01		Nitrate as NO3 by IC	11	mg/l	.880
04/26/01		Nitrate-N by IC	2.4	mg/l	.200
04/26/01		Acetate	22	mg/l	1.000
04/26/01		Perchlorate	240	ug/l	20.000
04/27/01		Total Organic Carbon	7.23	mg/l	.500

SUMMARY OF POSITIVE DATA ONLY.

**MONTGOMERY WATSON LABORATORIES**

a Division of Montgomery Watson Americas, Inc.
555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 5400 Fax: 626 568 6324
1 800 566 LABS (1 800 566 5227)

Laboratory
Data Report
#78636

Foster Wheeler Environ. Inc.
Mark Lossi
1940 E Deere St, Ste 200
Santa Ana, CA 92705

Samples Received
04/26/01

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
----------	----------	---------	--------	---------	--------	-------	-----	----------

PBR-4-I-1 (2104260260) Sampled on 04/26/01 15:55

04/26/01 00:00	140320	(CADHS/EPA314)	Perchlorate	410	ug/l	40	10
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Nitrate by IC as NO3 & N

04/26/01 19:57	140345	(ML/EPA 300.0)	Nitrate-N by IC	4	mg/l	0.10	1
04/26/01 19:57	140345	(ML/EPA 300.0)	Nitrate as NO3 by IC	18	mg/l	0.44	1

PBR-4-I-7 (2104260261) Sampled on 04/26/01 16:00

04/26/01 00:00	140319	(ML/EPA 300 MOD)	Acetate	36	mg/l	1.0	1
04/27/01 00:00	140323	(ML/SM 5310C)	Total Organic Carbon	11.2	mg/l	0.50	1

PBR-4-E-10 (2104260262) Sampled on 04/26/01 16:10

04/26/01 00:00	140319	(ML/EPA 300 MOD)	Acetate	22	mg/l	1.0	1
04/26/01 00:00	140320	(CADHS/EPA314)	Perchlorate	240	ug/l	20	5
04/27/01 00:00	140323	(ML/SM 5310C)	Total Organic Carbon	7.23	mg/l	0.50	1

Nitrate by IC as NO3 & N

04/26/01 20:07	140348	(ML/EPA 300.0)	Nitrate-N by IC	2.4	mg/l	0.20	2
04/26/01 20:07	140348	(ML/EPA 300.0)	Nitrate as NO3 by IC	11	mg/l	0.88	2

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Laboratory
QC Summary
#78636

Foster Wheeler Environ. Inc.

QC Ref #140319 - Acetate**Analysis Date: 04/26/2001**

2104260261	PBR-4-I-7
2104260262	PBR-4-E-10

QC Ref #140320 - Perchlorate**Analysis Date: 04/26/2001**

2104260260	PBR-4-I-1
2104260262	PBR-4-E-10

QC Ref #140323 - Total Organic Carbon**Analysis Date: 04/27/2001**

2104260261	PBR-4-I-7
2104260262	PBR-4-E-10

QC Ref #140345 - Nitrate by IC as NO3 & N**Analysis Date: 04/26/2001**

2104260260	PBR-4-I-1
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QC Ref #140348 - Nitrate by IC as NO3 & N**Analysis Date: 04/26/2001**

2104260262	PBR-4-E-10
------------	------------

**MONTGOMERY WATSON LABORATORIES**

a Division of Montgomery Watson Americas, Inc.
555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400 Fax: 626 568 6324
1 800 566 LABS (1 800 566 5227)

Laboratory
QC Report
#78636

Foster Wheeler Environ. Inc.

QC Ref #140319 Acetate

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Acetate	5	5.09	101.8	(80.00 - 120.00)	
LCS2	Acetate	5	5.39	107.8	(80.00 - 120.00)	5.7

QC Ref #140320 Perchlorate

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04260260		(0.00 - 0.00)	
LCS1	Perchlorate	25.0	23.4	93.6	(85.00 - 115.00)	
LCS2	Perchlorate	25.0	24.8	99.2	(85.00 - 115.00)	5.8
MBLK	Perchlorate	ND				
MS	Perchlorate	25.0	23.1	92.4	(80.00 - 120.00)	
MSD	Perchlorate	25.0	25.4	101.6	(80.00 - 120.00)	9.5

QC Ref #140323 Total Organic Carbon

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
AASPKSMP	Spiked sample	Lab # 21	04260152		(0.00 - 0.00)	
LCS1	Total Organic Carbon	0.5	0.45	90.0	(75.00 - 125.00)	
LCS2	Total Organic Carbon	4.5	4.29	95.3	(75.00 - 125.00)	
MBLK	Total Organic Carbon	ND				
MS	Total Organic Carbon	8.0	7.75	96.9	(90.00 - 110.00)	
MSD	Total Organic Carbon	8.0	7.73	96.6	(90.00 - 110.00)	0.26

QC Ref #140345 Nitrate by IC as NO3 & N

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04260075		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.59	103.6	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.57	102.8	(90.00 - 110.00)	0.78
MS	Nitrate-N	2.5	2.67	106.8	(90.00 - 110.00)	

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates
are advisory only, unless otherwise specified in the method.

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Laboratory
QC Report
#78636

Foster Wheeler Environ. Inc.
(continued)

MSD	Nitrate-N	2.5	2.66	106.4	(90.00 - 110.00) 0.38
MBLK	Nitrate as NO3 by IC	ND			

QC Ref #140348

Nitrate by IC as NO3 & N

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04260075		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.59	103.6	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.57	102.8	(90.00 - 110.00) 0.78	
MS	Nitrate-N	2.5	2.67	106.8	(90.00 - 110.00)	
MSD	Nitrate-N	2.5	2.66	106.4	(90.00 - 110.00) 0.38	
MBLK	Nitrate as NO3 by IC	ND				

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates
are advisory only, unless otherwise specified in the method.



FOSTER WHEELER ENVIRONMENTAL CORPORATION

CHAIN OF CUSTODY FORM REQUEST FOR ANALYSIS

PAGE OF

PROJECT JPL PBR		OFS NO.		HAZARD IDENTIFICATION Non Hazard <input checked="" type="checkbox"/> Reactive <input type="checkbox"/> Flammable <input type="checkbox"/> Toxic <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Infectious <input type="checkbox"/>		TIME REQUIRED NORMAL <input type="checkbox"/> DAYS RUSH <input type="checkbox"/> DAYS			
PROJECT ADDRESS 4800 Oak Grove Dr., Pasadena, CA		SAMPLER (Signature) David Tietje		ANALYSES REQUIRED					
SAMPLER (Name) David Tietje		LABORATORY Montgomery Watson Labs							
REPORTS TO BE SENT TO Mark Losi @ 999-756-7516 (Ph), -7560 (Fax)						THE INFORMATION IN THIS SECTION WILL NOT BE AVAILABLE TO THE LABORATORY			
SAMPLE NUMBER	TIME COLLECTED	DATE COLLECTED	NUMBER OF CONTAINERS	CONTAINER SIZE(S)	SAMPLE MATERIAL WATER SOIL OTHER (Describe)		LOCATION	DEPTH	QC CODE
PBR-4-I-1	15:55	4/26/01	2	2 x 125 mL	X				
PBR-4-I-7	16:00	4/26/01	2	40 mL, 125 mL	X				
PBR-4-E-10	16:10	4/26/01	4	40 mL, 3 x 125 mL	X				
LABORATORY INSTRUCTIONS/COMMENTS <div>David Tietje 4/26/01</div>									
SAMPLING COMMENTS									

RELINQUISHED BY (Signature) David Tietje	DATE 4/26/01	TIME 16:40	RECEIVED BY (Signature) David Tietje	DATE 4/26/01	TIME 16:40
COMPANY FWENT			COMPANY JPL		



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a Division of Montgomery Watson Americas, Inc.
555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400 Fax: 626 568 6324
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Foster Wheeler Environ. Inc.
1940 E Deere St, Ste 200

Santa Ana , CA 92705

Attention: Mark Lossi
Fax: 949 756-7560

DEB Debbie Frank
Project Manager

Report#: 78557
TREAT

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are QC Report, QC Summary, Data Report, Hits Report, totaling 5 page[s].

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555 East Walnut Street
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1 800 566 LABS (1 800 566 5227)

Laboratory
Hits Report
#78557

Foster Wheeler Environ. Inc.
Mark Lossi
1940 E Deere St, Ste 200
Santa Ana, CA 92705

Samples Received
25-apr-2001 16:51:13

Analyzed	Sample#	Sample ID	Result	UNITS	MDL
	2104250282	PBR-3-I-1			
04/25/01		Nitrate as NO3 by IC	15	mg/l	.440
04/25/01		Nitrate-N by IC	3.5	mg/l	.100
04/25/01		Perchlorate	420	ug/l	40.000
	2104250283	PBR-3-I-7			
04/27/01		Total Organic Carbon	15.1	mg/l	.500
	2104250284	PBR-3-E-10			
04/25/01		Nitrate as NO3 by IC	9.2	mg/l	.880
04/25/01		Nitrate-N by IC	2.1	mg/l	.200
04/25/01		Perchlorate	200	ug/l	40.000
04/27/01		Total Organic Carbon	9.54	mg/l	.500

SUMMARY OF POSITIVE DATA ONLY.

**MONTGOMERY WATSON LABORATORIES**

a Division of Montgomery Watson Americas, Inc.
555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400 Fax: 626 568 6324
1 800 566 LABS (1 800 566 5227)

Laboratory
Data Report
#78557

Foster Wheeler Environ. Inc.
Mark Lossi
1940 E Deere St, Ste 200
Santa Ana, CA 92705

Samples Received
04/25/01

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
----------	----------	---------	--------	---------	--------	-------	-----	----------

PBR-3-I-1 (2104250282) Sampled on 04/24/01 16:00

04/25/01 00:00	140081	(CADHS/EPA314)	Perchlorate	420	ug/l	40	10
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Nitrate by IC as NO3 & N

04/25/01 17:09	140333	(ML/EPA 300.0)	Nitrate-N by IC	3.5	mg/l	0.10	1
04/25/01 17:09	140333	(ML/EPA 300.0)	Nitrate as NO3 by IC	15	mg/l	0.44	1

PBR-3-I-7 (2104250283) Sampled on 04/24/01 16:05

04/26/01 00:00	140319	(ML/EPA 300 MOD)	Acetate	ND	mg/l	1.0	1
04/27/01 00:00	140246	(ML/SM 5310C)	Total Organic Carbon	15.1	mg/l	0.50	1

PBR-3-E-10 (2104250284) Sampled on 04/24/01 16:10

04/26/01 00:00	140319	(ML/EPA 300 MOD)	Acetate	ND	mg/l	1.0	1
04/25/01 00:00	140081	(CADHS/EPA314)	Perchlorate	200	ug/l	40	10
04/27/01 00:00	140246	(ML/SM 5310C)	Total Organic Carbon	9.54	mg/l	0.50	1

Nitrate by IC as NO3 & N

04/25/01 17:20	140334	(ML/EPA 300.0)	Nitrate-N by IC	2.1	mg/l	0.20	2
04/25/01 17:20	140334	(ML/EPA 300.0)	Nitrate as NO3 by IC	9.2	mg/l	0.88	2

**MONTGOMERY WATSON LABORATORIES**

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555 East Walnut Street
Pasadena, California 91101
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1 800 566 LABS (1 800 566 5227)

Laboratory
QC Summary
#78557

Foster Wheeler Environ. Inc.

QC Ref #140081 - Perchlorate**Analysis Date: 04/25/2001**

2104250282 PBR-3-I-1
2104250284 PBR-3-E-10

QC Ref #140246 - Total Organic Carbon**Analysis Date: 04/27/2001**

2104250283 PBR-3-I-7
2104250284 PBR-3-E-10

QC Ref #140319 - Acetate**Analysis Date: 04/26/2001**

2104250283 PBR-3-I-7
2104250284 PBR-3-E-10

QC Ref #140333 - Nitrate by IC as NO3 & N**Analysis Date: 04/25/2001**

2104250282 PBR-3-I-1

QC Ref #140334 - Nitrate by IC as NO3 & N**Analysis Date: 04/25/2001**

2104250284 PBR-3-E-10

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Laboratory
QC Report
#78557

Foster Wheeler Environ. Inc.

QC Ref #140081**Perchlorate**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04230025		(0.00 - 0.00)	
LCS1	Perchlorate	25.0	24.9	99.6	(85.00 - 115.00)	
LCS2	Perchlorate	25.0	25.1	100.4	(85.00 - 115.00)	0.80
MBLK	Perchlorate	ND				
MS	Perchlorate	25.0	26.6	106.4	(80.00 - 120.00)	
MSD	Perchlorate	25.0	26.0	104.0	(80.00 - 120.00)	2.3

QC Ref #140246**Total Organic Carbon**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
AASPKSMP	Spiked sample	Lab # 21	04260035		(0.00 - 0.00)	
LCS1	Total Organic Carbon	0.5	0.49	98.0	(75.00 - 125.00)	
LCS2	Total Organic Carbon	4.5	4.59	102.0	(75.00 - 125.00)	
MBLK	Total Organic Carbon	ND				
MS	Total Organic Carbon	4.0	4.07	101.8	(90.00 - 110.00)	
MSD	Total Organic Carbon	4.0	4.03	100.8	(90.00 - 110.00)	0.99

QC Ref #140319**Acetate**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Acetate	5	5.09	101.8	(80.00 - 120.00)	
LCS2	Acetate	5	5.39	107.8	(80.00 - 120.00)	5.7

QC Ref #140333**Nitrate by IC as NO3 & N**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04250125		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.58	103.2	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.58	103.2	(90.00 - 110.00)	0.00
MS	Nitrate-N	2.5	2.75	<u>110.0</u>	(90.00 - 110.00)	

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
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Laboratory
QC Report
#78557

Foster Wheeler Environ. Inc.
(continued)

MSD	Nitrate-N	2.5	2.75	<u>110.0</u>	(90.00 - 110.00) 0.00
MBLK	Nitrate as NO3 by IC	ND			

QC Ref #140334 **Nitrate by IC as NO3 & N**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04250125		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.58	103.2	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.58	103.2	(90.00 - 110.00) 0.00	
MS	Nitrate-N	2.5	2.75	<u>110.0</u>	(90.00 - 110.00)	
MSD	Nitrate-N	2.5	2.75	<u>110.0</u>	(90.00 - 110.00) 0.00	
MBLK	Nitrate as NO3 by IC	ND				

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates
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FOSTER WHEELER ENVIRONMENTAL CORPORATION

CHAIN OF CUSTODY FORM REQUEST FOR ANALYSIS

[illegible]



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Laboratory Report

for

Foster Wheeler Environ. Inc.

1940 E Deere St, Ste 200

Santa Ana , CA 92705

Attention: Mark Lossi

Fax: 949 756-7560

DEB Debbie Frank
Project Manager

Report#: 78435
TREAT

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are QC Report, QC Summary, Data Report, Hits Report, totaling 5 page[s].

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Laboratory
Hits Report
#78435

Foster Wheeler Environ. Inc.
Mark Lossi
1940 E Deere St, Ste 200
Santa Ana, CA 92705

Samples Received
24-apr-2001 12:46:03

Analyzed	Sample#	Sample ID	Result	UNITS	MDL
	2104240234	PBR-2-I-1			
04/24/01		Nitrate as NO3 by IC	20	mg/l	.440
04/24/01		Nitrate-N by IC	4.5	mg/l	.100
04/25/01		Perchlorate	410	ug/l	40.000
	2104240235	PBR-2-I-5			
04/25/01		Acetate	69	mg/l	5.000
04/25/01		Total Organic Carbon	22.4	mg/l	2.500
	2104240236	PBR-2-I-7			
04/25/01		Acetate	240	mg/l	10.000
04/25/01		Total Organic Carbon	76.3	mg/l	5.000
	2104240237	PBR-2-E-8			
04/24/01		Nitrate as NO3 by IC	6.6	mg/l	.880
04/24/01		Nitrate-N by IC	1.5	mg/l	.200
04/25/01		Perchlorate	160	ug/l	40.000
04/25/01		Total Organic Carbon	21.1	mg/l	5.000
	2104240238	PBR-2-E-10			
04/24/01		Nitrate as NO3 by IC	6.2	mg/l	.880
04/24/01		Nitrate-N by IC	1.4	mg/l	.200
04/25/01		Perchlorate	110	ug/l	40.000
04/25/01		Total Organic Carbon	60.8	mg/l	5.000

SUMMARY OF POSITIVE DATA ONLY.

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Laboratory
Data Report
#78435

Foster Wheeler Environ. Inc.
Mark Lossi
1940 E Deere St, Ste 200
Santa Ana, CA 92705

Samples Received
04/24/01

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
PBR-2-I-1 (2104240234) Sampled on 04/24/01 08:00								
	04/25/01 00:00	140081	(CADHS/EPA314)	Perchlorate	410	ug/l	40	10
 Nitrate by IC as NO3 & N								
	04/24/01 16:18	140061	(ML/EPA 300.0)	Nitrate-N by IC	4.5	mg/l	0.10	1
	04/24/01 16:18	140061	(ML/EPA 300.0)	Nitrate as NO3 by IC	20	mg/l	0.44	1
PBR-2-I-5 (2104240235) Sampled on 04/24/01 08:00								
	04/25/01 00:00	139979	(ML/EPA 300 MOD)	Acetate	69	mg/l	5.0	10
	04/25/01 00:00	140076	(ML/SM 5310C)	Total Organic Carbon	22.4	mg/l	2.5	5
PBR-2-I-7 (2104240236) Sampled on 04/24/01 08:00								
	04/25/01 00:00	139979	(ML/EPA 300 MOD)	Acetate	240	mg/l	10	20
	04/25/01 00:00	140076	(ML/SM 5310C)	Total Organic Carbon	76.3	mg/l	5.0	10
PBR-2-E-8 (2104240237) Sampled on 04/24/01 08:00								
	04/25/01 00:00	140081	(CADHS/EPA314)	Perchlorate	160	ug/l	40	10
	04/25/01 00:00	140076	(ML/SM 5310C)	Total Organic Carbon	21.1	mg/l	5.0	10
 Nitrate by IC as NO3 & N								
	04/24/01 16:06	140060	(ML/EPA 300.0)	Nitrate-N by IC	1.5	mg/l	0.20	2
	04/24/01 16:06	140060	(ML/EPA 300.0)	Nitrate as NO3 by IC	6.6	mg/l	0.88	2
PBR-2-E-10 (2104240238) Sampled on 04/24/01 08:00								
	04/25/01 00:00	140081	(CADHS/EPA314)	Perchlorate	110	ug/l	40	10
	04/25/01 00:00	140076	(ML/SM 5310C)	Total Organic Carbon	60.8	mg/l	5.0	10
 Nitrate by IC as NO3 & N								
	04/24/01 15:56	140058	(ML/EPA 300.0)	Nitrate-N by IC	1.4	mg/l	0.20	2
	04/24/01 15:56	140058	(ML/EPA 300.0)	Nitrate as NO3 by IC	6.2	mg/l	0.88	2

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Laboratory
QC Summary
#78435

Foster Wheeler Environ. Inc.

QC Ref #139979 - Acetate**Analysis Date: 04/25/2001**

2104240235	PBR-2-I-5
2104240236	PBR-2-I-7

QC Ref #140058 - Nitrate by IC as NO3 & N**Analysis Date: 04/24/2001**

2104240238	PBR-2-E-10
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QC Ref #140060 - Nitrate by IC as NO3 & N**Analysis Date: 04/24/2001**

2104240237	PBR-2-E-8
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QC Ref #140061 - Nitrate by IC as NO3 & N**Analysis Date: 04/24/2001**

2104240234	PBR-2-I-1
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QC Ref #140076 - Total Organic Carbon**Analysis Date: 04/25/2001**

2104240235	PBR-2-I-5
2104240236	PBR-2-I-7
2104240237	PBR-2-E-8
2104240238	PBR-2-E-10

QC Ref #140081 - Perchlorate**Analysis Date: 04/25/2001**

2104240234	PBR-2-I-1
2104240237	PBR-2-E-8
2104240238	PBR-2-E-10

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Laboratory
QC Report
#78435

Foster Wheeler Environ. Inc.

QC Ref #139979**Acetate**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Acetate	5	4.99	99.8	(80.00 - 120.00)	
LCS2	Acetate	5	5.14	102.8	(80.00 - 120.00)	3.0

QC Ref #140058**Nitrate by IC as NO3 & N**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04240234		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.53	101.2	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.59	103.6	(90.00 - 110.00)	2.3
MS	Nitrate-N	2.5	2.7	108.0	(90.00 - 110.00)	
MSD	Nitrate-N	2.5	2.9	<u>116.0</u>	(90.00 - 110.00)	7.1
MBLK	Nitrate as NO3 by IC	ND				

QC Ref #140060**Nitrate by IC as NO3 & N**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04240234		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.53	101.2	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.59	103.6	(90.00 - 110.00)	2.3
MS	Nitrate-N	2.5	2.7	108.0	(90.00 - 110.00)	
MSD	Nitrate-N	2.5	2.9	<u>116.0</u>	(90.00 - 110.00)	7.1
MBLK	Nitrate as NO3 by IC	ND				

QC Ref #140061**Nitrate by IC as NO3 & N**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04240234		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.53	101.2	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.59	103.6	(90.00 - 110.00)	2.3
MS	Nitrate-N	2.5	2.7	108.0	(90.00 - 110.00)	

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Laboratory
QC Report
#78435

Foster Wheeler Environ. Inc.
(continued)

MSD	Nitrate-N	2.5	2.9	<u>116.0</u>	(90.00 - 110.00) 7.1
MBLK	Nitrate as NO3 by IC	ND			

QC Ref #140076 **Total Organic Carbon**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
AASPKSMP	Spiked sample	Lab # 21	04240308		(0.00 - 0.00)	
LCS1	Total Organic Carbon	0.5	0.48	96.0	(75.00 - 125.00)	
LCS2	Total Organic Carbon	4.5	4.39	97.6	(75.00 - 125.00)	
MBLK	Total Organic Carbon	ND				
MS	Total Organic Carbon	4.0	4.18	104.5	(90.00 - 110.00)	
MSD	Total Organic Carbon	4.0	4.14	103.5	(90.00 - 110.00) 0.96	

QC Ref #140081 **Perchlorate**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04230025		(0.00 - 0.00)	
LCS1	Perchlorate	25.0	24.9	99.6	(85.00 - 115.00)	
LCS2	Perchlorate	25.0	25.1	100.4	(85.00 - 115.00) 0.80	
MBLK	Perchlorate	ND				
MS	Perchlorate	25.0	26.6	106.4	(80.00 - 120.00)	
MSD	Perchlorate	25.0	26.0	104.0	(80.00 - 120.00) 2.3	

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NUMBER 2946

FOSTER WHEELER ENVIRONMENTAL CORPORATION

78435

CHAIN OF CUSTODY FORM REQUEST FOR ANALYSIS

PAGE OF

PROJECT		OFS NO.		HAZARD IDENTIFICATION		TIME REQUIRED		ANALYSES REQUIRED		THE INFORMATION IN THIS SECTION WILL NOT BE AVAILABLE TO THE LABORATORY	
PROJECT ADDRESS		SAMPLER (Name)		SAMPLER (Signature)		SAMPLER (Signature)		SAMPLER (Signature)		SAMPLER (Signature)	
LABORATORY		LABORATORY		LABORATORY		LABORATORY		LABORATORY		LABORATORY	
REPORTS TO BE SENT TO		REPORTS TO BE SENT TO		REPORTS TO BE SENT TO		REPORTS TO BE SENT TO		REPORTS TO BE SENT TO		REPORTS TO BE SENT TO	
SAMPLE NUMBER		TIME COLLECTED		DATE COLLECTED		NUMBER OF CONTAINERS		CONTAINER SIZE(S)		SAMPLE MATERIAL	
										WATER SOIL OTHER (Describe)	
PBR-2-I-1	8:10	4/24/01	2	2x125ml							
PBR-2-I-5	8:10	4/24/01	2	1x40ml; 1x125ml							
PBR-2-I-7	8:10	4/24/01	2	" "							
PBR-2-E-8	8:00	4/24/01	3	3x125ml							
PBR-2-E-10	8:00	4/24/01	3	3x125ml							
LABORATORY INSTRUCTIONS/COMMENTS											
SAMPLING COMMENTS											

RELINQUISHED BY (Signature)		DATE		RECEIVED BY (Signature)		DATE	
[Signature]		4/24/01		[Signature]		[Date]	
COMPANY		TIME		COMPANY		TIME	



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Laboratory Report

for

Foster Wheeler Environ. Inc.
1940 E Deere St, Ste 200

Santa Ana , CA 92705

Attention: Mark Lossi
Fax: 949 756-7560

DEB Debbie Frank
Project Manager

Report#: 78295
TREAT

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are QC Report, QC Summary, Data Report, Hits Report, totaling 7 page[s].

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Laboratory
Hits Report
#78295

Foster Wheeler Environ. Inc.
Mark Lossi
1940 E Deere St, Ste 200
Santa Ana, CA 92705

Samples Received
20-apr-2001 13:11:38

Analyzed	Sample#	Sample ID	Result	UNITS	MDL
	2104200072	PBR-1-I-1			
04/20/01		Nitrate as NO3 by IC	3.1	mg/l	.440
04/20/01		Nitrate-N by IC	0.7	mg/l	.100
04/22/01		Perchlorate	420	ug/l	40.000
	2104200073	PBR-1-I-5			
04/25/01		Acetate	5.1	mg/l	5.000
04/23/01		Total Organic Carbon	23.9	mg/l	12.500
	2104200074	PBR-1-I-7			
04/25/01		Acetate	90	mg/l	5.000
04/23/01		Total Organic Carbon	38.4	mg/l	12.500
	2104200075	PBR-1-E-8			
04/20/01		Nitrate as NO3 by IC	20	mg/l	.440
04/20/01		Nitrate-N by IC	4.5	mg/l	.100
04/22/01		Perchlorate	26	ug/l	4.000
04/23/01		Total Organic Carbon	15.3	mg/l	2.500
	2104200076	PBR-1-E-10			
04/20/01		Nitrate as NO3 by IC	12	mg/l	.880
04/20/01		Nitrate-N by IC	2.7	mg/l	.200
04/25/01		Acetate	13	mg/l	5.000
04/23/01		Total Organic Carbon	24.5	mg/l	5.000
	2104200077	PBR-1-E-16			

SUMMARY OF POSITIVE DATA ONLY.

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Laboratory
Data Report
#78295

Foster Wheeler Environ. Inc.
Mark Lossi
1940 E Deere St, Ste 200
Santa Ana, CA 92705

Samples Received
04/20/01

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
----------	----------	---------	--------	---------	--------	-------	-----	----------

PBR-1-I-1 (2104200072) Sampled on 04/20/01 11:15

04/22/01 00:00	139852	(CADHS/EPA314)	Perchlorate	420	ug/l	40	10
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Nitrate by IC as NO3 & N

04/20/01 18:07	139812	(ML/EPA 300.0)	Nitrate-N by IC	0.7	mg/l	0.10	1
04/20/01 18:07	139812	(ML/EPA 300.0)	Nitrate as NO3 by IC	3.1	mg/l	0.44	1

PBR-1-I-5 (2104200073) Sampled on 04/20/01 11:20

04/25/01 00:00	139979	(ML/EPA 300 MOD)	Acetate	5.1	mg/l	5.0	10
04/23/01 00:00	139920	(ML/SM 5310C)	Total Organic Carbon	23.9	mg/l	12	25

PBR-1-I-7 (2104200074) Sampled on 04/20/01 11:20

04/25/01 00:00	139979	(ML/EPA 300 MOD)	Acetate	90	mg/l	5.0	10
04/23/01 00:00	139920	(ML/SM 5310C)	Total Organic Carbon	38.4	mg/l	12	25

PBR-1-E-8 (2104200075) Sampled on 04/20/01 11:25

04/25/01 00:00	139979	(ML/EPA 300 MOD)	Acetate	ND	mg/l	1.0	2
04/22/01 00:00	139852	(CADHS/EPA314)	Perchlorate	26	ug/l	4.0	1
04/23/01 00:00	139920	(ML/SM 5310C)	Total Organic Carbon	15.3	mg/l	2.5	5

Nitrate by IC as NO3 & N

04/20/01 18:17	139814	(ML/EPA 300.0)	Nitrate-N by IC	4.5	mg/l	0.10	1
04/20/01 18:17	139814	(ML/EPA 300.0)	Nitrate as NO3 by IC	20	mg/l	0.44	1

PBR-1-E-10 (2104200076) Sampled on 04/20/01 11:25

04/25/01 00:00	139979	(ML/EPA 300 MOD)	Acetate	13	mg/l	5.0	10
04/22/01 00:00	139790	(CADHS/EPA314)	Perchlorate	ND	ug/l	4.0	1
04/23/01 00:00	139920	(ML/SM 5310C)	Total Organic Carbon	24.5	mg/l	5.0	10

Nitrate by IC as NO3 & N

04/20/01 16:39	139815	(ML/EPA 300.0)	Nitrate-N by IC	2.7	mg/l	0.20	2
04/20/01 16:39	139815	(ML/EPA 300.0)	Nitrate as NO3 by IC	12	mg/l	0.88	2

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Laboratory
Data Report
#78295

Foster Wheeler Environ. Inc.
(continued)

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
PBR-1-E-16 (2104200077)				Sampled on 04/20/01 11:30				
04/22/01 00:00	139790	(CADHS/EPA314)	Perchlorate	ND	ug/l	4.0	1	

**MONTGOMERY WATSON LABORATORIES**

a Division of Montgomery Watson Americas, Inc.
555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400 Fax: 626 568 6324
1 800 566 LABS (1 800 566 5227)

Laboratory
QC Summary
#78295

Foster Wheeler Environ. Inc.

QC Ref #139790 - Perchlorate**Analysis Date: 04/22/2001**

2104200076	PBR-1-E-10
2104200077	PBR-1-E-16

QC Ref #139812 - Nitrate by IC as NO3 & N**Analysis Date: 04/20/2001**

2104200072	PBR-1-I-1
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QC Ref #139814 - Nitrate by IC as NO3 & N**Analysis Date: 04/20/2001**

2104200075	PBR-1-E-8
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QC Ref #139815 - Nitrate by IC as NO3 & N**Analysis Date: 04/20/2001**

2104200076	PBR-1-E-10
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QC Ref #139852 - Perchlorate**Analysis Date: 04/22/2001**

2104200072	PBR-1-I-1
2104200075	PBR-1-E-8

QC Ref #139920 - Total Organic Carbon**Analysis Date: 04/23/2001**

2104200073	PBR-1-I-5
2104200074	PBR-1-I-7
2104200075	PBR-1-E-8
2104200076	PBR-1-E-10

QC Ref #139979 - Acetate**Analysis Date: 04/25/2001**

2104200073	PBR-1-I-5
2104200074	PBR-1-I-7
2104200075	PBR-1-E-8
2104200076	PBR-1-E-10

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Laboratory
QC Report
#78295

Foster Wheeler Environ. Inc.

QC Ref #139790**Perchlorate**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04100151		(0.00 - 0.00)	
LCS1	Perchlorate	25.0	24.7	98.8	(85.00 - 115.00)	
LCS2	Perchlorate	25.0	26.0	104.0	(85.00 - 115.00)	5.1
MBLK	Perchlorate	ND				

QC Ref #139812**Nitrate by IC as NO3 & N**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04160086		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.61	104.4	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.59	103.6	(90.00 - 110.00)	0.77
MS	Nitrate-N	2.5	2.64	105.6	(90.00 - 110.00)	
MSD	Nitrate-N	2.5	2.64	105.6	(90.00 - 110.00)	0.00
MBLK	Nitrate as NO3 by IC	ND				

QC Ref #139814**Nitrate by IC as NO3 & N**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04160086		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.61	104.4	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.59	103.6	(90.00 - 110.00)	0.77
MS	Nitrate-N	2.5	2.64	105.6	(90.00 - 110.00)	
MSD	Nitrate-N	2.5	2.64	105.6	(90.00 - 110.00)	0.00
MBLK	Nitrate as NO3 by IC	ND				

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates
are advisory only, unless otherwise specified in the method.

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Laboratory
QC Report
#78295

Foster Wheeler Environ. Inc.
(continued)

QC Ref #139815 Nitrate by IC as NO3 & N

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04160086		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.61	104.4	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.59	103.6	(90.00 - 110.00)	0.77
MS	Nitrate-N	2.5	2.64	105.6	(90.00 - 110.00)	
MSD	Nitrate-N	2.5	2.64	105.6	(90.00 - 110.00)	0.00
MBLK	Nitrate as NO3 by IC	ND				

QC Ref #139852 Perchlorate

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 21	04200077		(0.00 - 0.00)	
LCS1	Perchlorate	25.0	23.3	93.2	(85.00 - 115.00)	
LCS2	Perchlorate	25.0	25.0	100.0	(85.00 - 115.00)	7.0
MBLK	Perchlorate	ND				
MS	Perchlorate	25.0	23.3	93.2	(80.00 - 120.00)	
MSD	Perchlorate	25.0	23.3	93.2	(80.00 - 120.00)	0.00

QC Ref #139920 Total Organic Carbon

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
AASPKSMP	Spiked sample	Lab # 21	04200133		(0.00 - 0.00)	
LCS1	Total Organic Carbon	0.5	0.48	96.0	(75.00 - 125.00)	
LCS2	Total Organic Carbon	4.5	4.60	102.2	(75.00 - 125.00)	
MBLK	Total Organic Carbon	ND				
MS	Total Organic Carbon	4.0	4.00	100.0	(90.00 - 110.00)	
MSD	Total Organic Carbon	4.0	3.98	99.5	(90.00 - 110.00)	0.50

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
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QC Report
#78295

Foster Wheeler Environ. Inc.
(continued)

QC Ref #139979

Acetate

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	Acetate	5	4.99	99.8	(80.00 - 120.00)	
LCS2	Acetate	5	5.14	102.8	(80.00 - 120.00)	3.0

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates
are advisory only, unless otherwise specified in the method.



NUMBER 2942

FOSTER WHEELER ENVIRONMENTAL CORPORATION

CHAIN OF CUSTODY FORM REQUEST FOR ANALYSIS

PROJECT		OFS NO.		PAGE		OF	
PROJECT ADDRESS		PROJECT NO.		HAZARD IDENTIFICATION		TIME REQUIRED	
PROJECT ADDRESS		PROJECT NO.		HAZARD IDENTIFICATION		TIME REQUIRED	
PROJECT ADDRESS		PROJECT NO.		HAZARD IDENTIFICATION		TIME REQUIRED	
5PL PBR		18295		Non Hazard <input checked="" type="checkbox"/> Reactive <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Toxic <input type="checkbox"/> Infectious <input type="checkbox"/>		NORMAL <input type="checkbox"/> DAYS RUSH <input checked="" type="checkbox"/> 2 DAYS	
4800 Oak Grove Drive, Pasadena, CA		18295		Non Hazard <input checked="" type="checkbox"/> Reactive <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Toxic <input type="checkbox"/> Infectious <input type="checkbox"/>		NORMAL <input type="checkbox"/> DAYS RUSH <input checked="" type="checkbox"/> 2 DAYS	
SAMPLER (Name)		SAMPLER (Signature)		HAZARD IDENTIFICATION		TIME REQUIRED	
David Tejeda, Mark Losi		David Tejeda		Non Hazard <input checked="" type="checkbox"/> Reactive <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Toxic <input type="checkbox"/> Infectious <input type="checkbox"/>		NORMAL <input type="checkbox"/> DAYS RUSH <input checked="" type="checkbox"/> 2 DAYS	
LABORATORY		LABORATORY		HAZARD IDENTIFICATION		TIME REQUIRED	
Montgomery Watson Laboratories		Montgomery Watson Laboratories		Non Hazard <input checked="" type="checkbox"/> Reactive <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Toxic <input type="checkbox"/> Infectious <input type="checkbox"/>		NORMAL <input type="checkbox"/> DAYS RUSH <input checked="" type="checkbox"/> 2 DAYS	
REPORTS TO BE SENT TO		REPORTS TO BE SENT TO		HAZARD IDENTIFICATION		TIME REQUIRED	
Mark Losi (999) 756-7516, (999) 756-7560 (Fax)		Mark Losi (999) 756-7516, (999) 756-7560 (Fax)		Non Hazard <input checked="" type="checkbox"/> Reactive <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Toxic <input type="checkbox"/> Infectious <input type="checkbox"/>		NORMAL <input type="checkbox"/> DAYS RUSH <input checked="" type="checkbox"/> 2 DAYS	
SAMPLE NUMBER	TIME COLLECTED	DATE COLLECTED	NUMBER OF CONTAINERS	CONTAINER SIZE(S)	WATER	SOIL	OTHER (Describe)
PBR-1-I-1	11:15	4/20/01	3	125, 250 mL	X	X	
PBR-1-I-5	11:20	4/20/01	3	40, 125, 500	X	X	
PBR-1-I-7	11:20	4/20/01	3	40, 125, 500	X	X	
PBR-1-E-8	11:25	4/20/01	5	40, 125(3), 500	X	X	
PBR-1-E-10	11:25	4/20/01	5	40, 125(3), 500	X	X	
PBR-1-E-16	11:30	4/20/01	2	250, 125	X	X	
LABORATORY INSTRUCTIONS/COMMENTS							
THE INFORMATION IN THIS SECTION WILL NOT BE AVAILABLE TO THE LABORATORY							
LOCATION DEPTH QC CODE							
S.P. #15							
SAMPLING COMMENTS							
RECEIVED BY (Signature)							
DATE							
TIME							
COMPANY							
RECEIVED BY (Signature)							
DATE							
TIME							
COMPANY							